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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/920,450   | 08/01/2001  | Yasuhiro Koizumi     | A-407               | 4681             |
| 802  | 7590        | 07/13/2004           | EXAMINER            |                  |
| DELLETT AND WALTERS<br>P. O. BOX 2786<br>PORTLAND, OR 97208-2786 |             |                      | VALENTIN, JUAN D    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2877                |                  |

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/920,450

Applicant(s)

KOIZUMI ET AL.

Examiner

Juan D Valentin II

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on RCE (5/25/2004).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 9 is/are rejected.
- 7) ☒ Claim(s) 1 and 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 & 2 are objected too. The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. Applicant is asked to provide further in depth structure into the inventive apparatus or is required to amend the claim(s) to read fully as a method claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8, & 9 rejected under 35 U.S.C. 102(b) as being fully anticipated by Batchelder et al. (USPN '403, hereinafter Batchelder).

### **Claim 1**

Batchelder in conjunction with Fig. 1a, discloses a defect inspection apparatus for a phase shift mask (112, silicon wafer) having a phase shifter pattern (114, trenches) provided on a mask transparent substrate. That is characterized in that after said phase shifter pattern has been formed (ion etching), a phase shifter defect inspection is performed from a mask transparent

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substrate side of said phase shift mask, which is opposite to a side thereof where said phase shifter pattern has been formed, illuminating a phase shifter pattern fabricated region through an objective lens and capturing a dark field image or a bright field image of said phase shifter pattern fabricated region through said objective lens (col. 3, lines 8-10, col. 7, lines 4-25, & col. 8, lines 20-31). It is the position of the Office that the trenches of Batchelder formed by an ion etching process are the equivalent to Applicants claimed "phase shift patterns" which are also formed by an ion etching process.

**Claim 2**

Batchelder discloses a defect inspection apparatus for a phase shift mask wherein light is applied to said phase shift mask from the mask transparent substrate side thereof and reflection images of at least two different phase shifter pattern fabricated regions are captured (col. 3, lines 8-10 & col. 7, lines 4-25). Then respective image signals of the reflection images are compared with each other to detect a defect on the mask from a difference between said signals (col. 7, lines 45-67).

**Claim 3**

Batchelder discloses wherein said at least two different phase shifter pattern fabricated regions are phase shifter pattern fabricated regions of chips different from each other (Fig. 4e).

**Claim 4**

Batchelder discloses the reflection images of at least two different phase shifter pattern fabricated regions being captured through respective magnifying optical systems (Fig. 4e).

**Claim 5**

Batchelder discloses a defect inspection apparatus for a phase shift mask wherein at least two different phase shifter pattern fabricated regions are phase shifter pattern fabricated regions in an identical chip pattern (col. 7, lines 19-25). It is the position of the Office that if three different detectors are used, then three different light spots are formed on a single sample, those three different light spots are analyzing three different areas on an identical patterned reticle.

**Claim 6**

Batchelder discloses in conjunction with Fig. 1a, a defect inspection apparatus for a phase shift mask wherein the reflection images of said at least two different phase shifter pattern fabricated regions are captured through an identical magnifying optical system (130).

**Claims 8 & 9**

Batchelder discloses a defect inspection apparatus for a phase shift mask wherein said reflection images obtained by reflected light are dark field images obtained by dark field illumination or bright field images obtained by bright field illumination (col. 11, lines 35-46).

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***Conclusion***

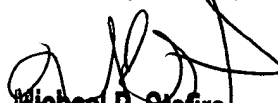
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D Valentin II whose telephone number is (571) 272-2433. The examiner can normally be reached on M-Th., Every other Fr..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Juan D Valentin II  
Examiner 2977  
JDV  
July 7, 2004



Michael P. Stefira  
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